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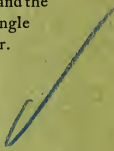
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A Study of Tuberculosis in Chicago

With special reference to the statistics collected in the
Jewish district by Dr. Theodore B. Sachs and the
house-to-house investigation of a single
block in the same district by Dr.
Sachs and by Miss Bertha Hazard
of Hull-House. Text by
Alice Hamilton, M.D.,
Hull-House



PUBLISHED BY

The City Homes Association

CHICAGO, 1905

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Alfred P. Ellis

A STUDY *of* TUBERCULOSIS IN CHICAGO

WITH SPECIAL REFERENCE TO THE STATISTICS COLLECTED IN
THE JEWISH DISTRICT BY DR. THEODORE B. SACHS AND
THE HOUSE-TO-HOUSE INVESTIGATION OF A SINGLE
BLOCK IN THE SAME DISTRICT BY DR. SACHS
AND BY MISS BERTHA HAZARD OF HULL-
HOUSE. TEXT BY ALICE HAMIL-
TON, M.D., HULL-HOUSE



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A STUDY OF TUBERCULOSIS IN CHICAGO

The last twenty years have seen a steadily increasing interest in the subject of tuberculosis, in the causes and distribution of this disease and especially in the means to be adopted for combating it. This interest is not confined to physicians and sanitarians, but is general, and the warfare against tuberculosis is engaging people of all classes of life, for the more knowledge we gain on this subject the more we are forced to believe that tuberculosis is, more than any other, a social disease and that to eradicate it we must enlist the forces not only of medical science, but of philanthropy and social science. We call tuberculosis a social disease because a study of its distribution shows that it prevails most widely where social conditions are unfavorable, that it is especially a disease of poor people, of people living in crowded, insanitary quarters with insufficient food and unhealthful occupations. Statistics show that while 17.5 per 10,000 living is the death rate from tuberculosis for members of the professional and mercantile classes in the registration states, 38 is the rate for the laboring classes. In New York city a certain area of the lower East Side has a death rate of 50 to 59 per 10,000 living, while an area north of Central Park has a rate of less than 20 per 10,000 living.

Tuberculosis a social disease. Its prevalence more than twice as great in the laboring class as in the professional.

The general impression prevails in Chicago that our city enjoys a comparative immunity to tuberculosis, but no one who knows intimately the poorer parts of the city would be willing to confirm this impression, and the statistics now in process of compilation by the Tuberculosis Committee of the Visiting Nurse Association will probably serve to dispel it altogether. It is impossible to state just how prevalent this disease is in Chicago. There is no compulsory registration of cases of tuberculosis here as there is in New York city, and consequently the only available statistics are the mortality tables of the Board of Health. Even these, there is reason to believe, do not represent the entire number of cases. For various reasons, among the most important of which is the raising of the insurance

Lack of statistics in Chicago.

premiums when a near relative is known to have died of tuberculosis, the family physician often has great pressure brought to bear upon him to influence him to make out a death certificate for pneumonia or bronchitis instead of tuberculosis.

Hull-House undertakes an investigation of tuberculosis in its neighborhood.

During the past winter 1903-1904, an effort was made to study the extent and distribution of tuberculosis in the immediate neighborhood of Hull-House. At the outstart great difficulty was encountered in the Italian and Irish quarters. Having no data on which to proceed, a house-to-house canvass was proposed, but proved to be impracticable. Consumption is beginning to be considered a disgrace, it is a disease which must be covered up if possible, or called by another name. People will tell willingly how many cases of typhoid fever they have had in their families, but they are loth to admit a case of consumption, for the infectiousness of that disease is gradually becoming known and nobody wishes to be an object of dread to his neighbors. This method having to be abandoned, the dispensaries were then applied to for statistics and it was found that there was a large fund of information upon tuberculosis available in the Jewish quarter, as Dr. Theodore B. Sachs had been collecting statistics of tuberculosis for several years, so that this part of the neighborhood could be studied to great advantage. The statistics given as to tuberculosis in the Jewish quarter are of Dr. Sachs' compiling and are based upon the records of the United Hebrew Charities Dispensary, those of the Central Free Dispensary, the Cook County Hospital, the Michael Reese Hospital Dispensary and the Tuberculosis Hospital at Dunning, the mortality records of the Board of Health, and the records of Dr. Sachs' private practice in the neighborhood, and of the applicants examined by him for the National Jewish Hospital for Consumptives.

Reasons for choosing the Jewish quarter.

These records cover a period of one and a half years, beginning May 1, 1902, and comprise the cases of tuberculosis which were discovered during this time in the quarter of Chicago inhabited by the poorer Jews. This is a district bounded by Canal Street on the east, Blue Island Avenue on the west, Taylor Street on the north, and Fourteenth Place on the south. The area covers 244.6 acres and corresponds to one-half of the Ninth Ward and the southern end of the Nineteenth Ward. Its population is about 31,000, of which

22,500, or 71 per cent. are Jews. The Russian Jew represents the predominating element, the minority is composed of Jews from Austria, Hungary, Germany, Poland, Roumania, and other European countries. The constant emigration from the district of the more prosperous Americanized Jews is compensated for by a continuous influx of new immigrants, most of them very poor, so that the general aspect of this part of the city remains about the same in spite of the growing prosperity of many of the residents. The non-Jewish elements of the population are found chiefly on the outer belt of the district and consist of Bohemians, Irish, Italians, and a small number of Lithuanians and non-Jewish Poles.

According to Dr. Sachs' statistics, during the eighteen months covered by this investigation 677 cases of tuberculosis were discovered in this district, 589 of them being Jews and 88 non-Jews. The following chart shows the distribution of these cases.

Dr. Sachs' record of cases in this district during 1902-1904.

It is usually supposed that the Jewish race enjoys a comparative immunity to tuberculosis and this has been explained on the ground of their temperate habits, the careful inspection of their meat, the large amount of fat in their diet, or simply as a peculiar racial characteristic. The above statistics show that tuberculosis is by no means rare among the Jews in Chicago, that it is in fact very prevalent, although not to the same extent as among the non-Jews in the same district. It is therefore reasonable to suppose that if the Irish, Italian, Scandinavian, colored or Bohemian quarters were studied in the same way, a still larger proportion of cases would be disclosed.

According to Dr. Sachs the figures usually quoted as to the prevalence of tuberculosis among Jews are far below the actual facts. We quote from his article in the *Journal of the American Medical Association*, August 2, 1904:

From the first of May, 1902, till the first of November, 1903, 51 Jews died from tuberculosis in the district of Chicago inhabited by the poorer Jews. This represents an annual death rate of 1.51 per 1,000 living, or 138.5 deaths from this disease in 1,000 mortality from all causes. The corresponding death rate from tuberculosis in the central block (Chart II) was 2.81 per 1,000 living. During the same period of time the annual mortality from tuberculosis among the non-Jewish population of the Jewish district was 5.02 per 1,000 living.

Possible explanation of the apparently low death rate among Jews.

The annual death rate from tuberculosis in the city of Chicago according to the United States census of 1900 is 1.78 per 1,000 living or 110.2 deaths from tuberculosis in a total mortality of 1,000.

These figures would naturally lead to the conclusion that mortality from tuberculosis among Jews is comparatively low and that Jews enjoy a certain immunity from this disease. Statements of this nature are found in nearly every textbook and apparently conform with the experience of the most careful observers in the profession of this country and of Europe. . . .

Any medical man who has been brought into close contact with the Jewish poor of large cities will bear witness to the fact that only a certain portion of the Jewish tuberculous population die in the district in which they have contracted the disease. Their fear of consumption is much greater than among any other nationality and the belief in climate as the only cure for pulmonary disease is so firmly rooted that the first suggestion of anything abnormal with the lungs leads them to immediate preparation for a change to better climatic conditions. Men and women in very destitute circumstances will sell all their belongings and without second thought start on a journey to some of the western states. If for some reason they fail to secure financial assistance from some Jewish charity organization, their relatives and friends come to their rescue. The idea of proper climate as the only cure for any chronic cough is so widespread that plans for change of residence are frequently made without consulting a physician and at times against his advice. A large number will remove to more healthful quarters of the same city.

This constant emigration of the tuberculous population from the poor districts of the city results in the erroneous conclusion that the mortality among the poor Jews is very low.

From my experience as examining physician for the United Hebrew Charities and National Jewish Hospital for Consumptives, I am certain that only a fraction of the Jewish tuberculous poor die in the districts in which they contracted the disease, and consequently the conclusions concerning the prevalence of tuberculosis among Jews, based only on the rate of mortality, are necessarily erroneous to a considerable extent.

The following facts as to the ages of mortality from tuberculosis in the Jewish district of Chicago will illustrate this point: Of 51 deaths from this disease 26 occurred before the age of 15, while in the period of life between 20 and 40 years, or the usual period of greatest mortality from tuberculosis, only 10 deaths took place. The reason for a high mortality among children is explained by the frequent occurrence of meningeal tuberculosis. On the other hand the number of persons that die in the district between 20 and 40 years of age would be very large if it were not for that constant emigration of tuberculous adults. It is possible that certain conditions of Jewish life, particularly rarity of alcoholism and their dietary laws, may have some influence upon the prevalence of this dreadful disease, but the rate of mortality is much greater among them than has been so far recorded.

CHART I—Showing distribution of cases of tuberculosis in the Jewish district of Chicago (May 1, 1902, to November 1, 1903)

By DR. THEODORE B. SACHS

Area, 244.6 Acres.

Population } Jews 22,500
(approximate } Non-
estimate) } Jews 8,500

Total number of tuber-
culous cases - 677

Cases designated on chart 646

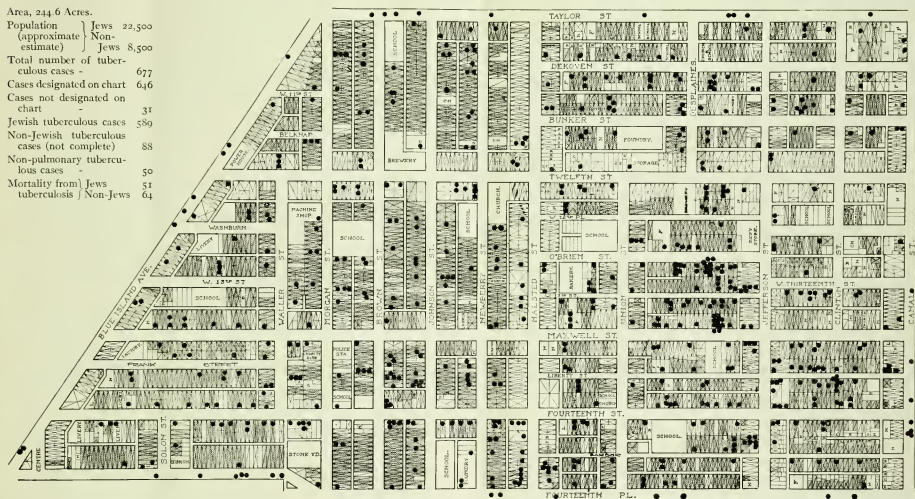
Cases not designated on
chart - 31

Jewish tuberculous cases 589

Non-Jewish tuberculous
cases (not complete) 88

Non-pulmonary tuber-
culous cases - 50

Mortality from Jews 51
tuberculosis Non-Jews 64



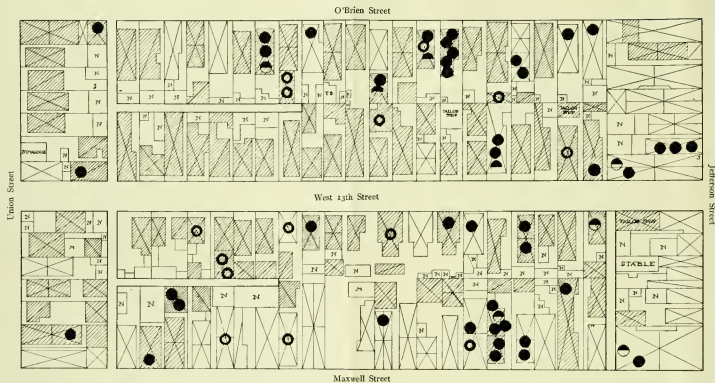
Cases of tuberculosis designated by black dots

1 STORY STORE	1ST DWELLING.
2 ST. STORE	2ND DWELLING.
3 ST. STORE	3RD DWELLING.
4 ST. STORE	4TH DWELLING.

F—Factory. N—Sheds, etc. B—Bakery. Ch—Church. L—Livery.

CHART II—A detailed study of a single block in the center of the Jewish district of Chicago

By DR. THEODORE B. SACHS AND MISS BERTHA HAZARD
Resident of Hull-House



Area, 8 acres. Population, 2,221

(A)—Adults

{ Jews 961
{ Non-Jews 125

(C)—Children under 18

{ Jews 1,053
{ Non-Jews 82

1—Living in rear flats and rear buildings

{ Adults 479
{ Children 485

2—Living in basements

{ Adults 13
{ Children 22

Number of tuberculous cases { Jews 53
Non-Jews 1

Deaths from tuberculosis { Jews 8
Non-Jews 3

● CASE OF TUBERCULOSIS —living
○ " " " " —dead
○ " " " " —moved

Cases of tuberculosis designated on this chart occurred in a period of 18 months (May 1, 1902, to November 1, 1903)

Another explanation that has been given for this low death rate from consumption among Jews is that, although not immune to the disease, they have a high degree of resistance and are more prone to the slow form, which lasts many years and often terminates late in life with an acute pneumonic attack.

The explanation of the high rate of mortality among the non-Jews of this district can probably be found in the fact that this part of the population is largely composed of old people who have been unable to follow the younger and more vigorous members of their several nationalities in their migration to other parts of the city. This quarter used to be inhabited chiefly by Bohemians, who have since then moved to the southwest before the influx of Russian Jews, leaving behind them the old and less prosperous who naturally swell the death rate from tuberculosis.

Dr. Sachs' notes as to the family history, occupations, and surroundings of the 589 Jewish consumptives in this district show that in many instances the disease could be traced to unhealthful occupations, in others to close contact with other consumptives, not always in the same family, and in still other cases to house infection.

Of those employed in factories or shops 50 per cent. were tailors (operators, finishers, cutters, etc.), 15 per cent. cigar or cigarette-makers. At least 70 per cent. of the tailors were operators employed in the so-called sweat-shops of the Jewish district. Of the 65 engaged in outdoor work 15 were rag-peddlers. Unfavorable conditions inherent to employments could be considered to a great extent responsible for the production of 284 cases, the number of tuberculous persons employed in factories, shops, and stores. 412 or 60 per cent. of the entire number of cases occurred in women and children at home. These cases could be traced either to the spread of infection in the same family, to close association with a tuberculous family in the same building, or occupation of premises previously infected by a consumptive.

The 677 cases of tuberculosis (589 among Jews and 88 among non-Jews) found in the Jewish district were distributed among 533 houses. Of this number

428 houses contained 1 case each
75 houses contained 2 cases each
26 houses contained 3 cases each
1 house contained 4 cases
2 houses contained 5 cases each
1 house contained 7 cases

Indoor, sedentary occupations predispose to tuberculosis.

Importance of house infection.

In 105 houses containing more than one case each, the number of infected families was 175, showing that spread of infection to neighboring families is probably almost as great as in the tuberculous families themselves.

It would require considerable investigation covering a long period of time in order to determine what proportion of the entire number of cases originated in houses previously occupied by consumptives. That premises vacated by tuberculous families served as a frequent source of infection is shown by the fact that tubercular family history could be elicited only in about one-half of the 412 cases that occurred in women and children at home; the other half must have originated either from premises originally infected or from close association with neighboring tuberculous patients.

The so-called Jewish district contains 3,996 dwellings: of this number 533 at the time of the investigation housed 677 cases of tuberculosis. The statistics given in this paper refer chiefly to the element of population frequenting charitable medical institutions. It would be a conservative estimate to say that at the present time there are at least 1,000 cases of tuberculosis in the district, or 1 case to 30 living, meaning that one dwelling out of every five is being infected. If records for the last few years are consulted it will probably be found that nearly every house in the Jewish district has been at some time occupied by a tubercular patient. Frequent change of residence leads to constant infection of new dwellings, yet no effort has ever been made toward systematic disinfection of premises infected by consumptives. Medical men throughout the city, familiar with the widespread occurrence of tuberculosis among the poor, know very well that all these deductions could be applied with equal strength to all parts of the city where our poor live and work.

Study of a single
block in this district.

As the district was too large for detailed study, one block, or rather a double block, in the center of the district was selected and here a careful house-to-house investigation was made by Dr. Sachs with the co-operation of Miss Bertha Hazard of Hull-House. This block is bounded by Jefferson Street on the east, Union Street west, Maxwell Street south, and O'Brien Street north. Through the center runs West Thirteenth Street, one of the narrowest streets in Chicago. The district covers eight acres and has a population of 278 people per acre. This small area disclosed a surprisingly large number of cases of tuberculosis. It may be remembered that a year or so ago when Mr. Ernest Poole published the results of his study of the notorious "Lung Block" in New York, he stated that the number of tuberculous cases in this terrible block would probably have been still greater had it not been for the fact that there was a small colony of Jews at the Market Street end, and as Jews are so little susceptible to tuberculosis their presence undoubtedly decreased the number of cases. It might be supposed, therefore, that the Chicago block which is inhabited almost entirely by Jews would not show a great

amount of tuberculosis, yet on studying Dr. Sachs' figures Miss Hazard found that the proportion of tuberculous cases in this block was within three-tenths of one per cent. as high as the proportion in the "plague spot" of New York, although the Chicago block was Jewish and the New York one Irish and Italian. The record of cases in the Chicago district covers only a year and a half; in New York the statistics as given by Mr. Poole cover a period of ten years. For the sake of fair comparison, the two worst years of the New York statistics were chosen and three-quarters of the number of cases occurring during these years taken. This number was then compared with the number of cases which occurred in the Chicago block during the same length of time, a year and a half. Mr. Poole estimates that the numbers in his records based upon reports to the Board of Health, represent only half the actual number of cases, but even after his figures are doubled, the cases in the Chicago block, which are actually known to exist almost equal them. The comparison may be stated as follows:

Chicago block has an almost identical ratio of tuberculosis as New York's famous "Lung Block."

	The "Lung Block" in New York	Block in Jewish quarter of Chicago
1 Location.....	Cherry, Catherine, Hamilton, Market Streets	Jefferson, O'Brien, Union, Maxwell Streets
2 Area.....	About 4 acres
3 Population.....	About 4,000	1,110
4 Nationalities.....	Chiefly Irish and Italian. —Some Jews, a sprinkling of 12 other nationalities	95 per cent. Jews
5 Number of Houses.....	On street 63. Rear 19	On street 59. Rear 17
6 Number of cases January 1896 and 1897. An approximate estimate.....	132	
7 Number of cases personally known to Dr. Sachs, May 1, 1902–November 1, 1903....		34
8 Ratio of number of cases during one and one-half years to population at any given time.....	3.3 per cent.	3 per cent.

From this comparison it appears that the ratio of the number of cases during one and a half years to the population of the block at any given time is 3.3 per cent. for the "Lung Block" and 3 per cent. for Chicago. That is, if we choose from the New York report the worst period for tuberculosis during the last ten years and if we then double the number of reported cases in order that we may not underestimate the number actually existing, we find that the percentage accurately known to exist in Chicago during the same time varies from the New York percentage by a fraction of 1 per cent.

This result came as a surprise even to people familiar with this part of the city, for the conditions are far less startling here than in New York and one would not expect to find that tuberculosis had already taken such deep roots in a city comparatively new and apparently not over-crowded.

Over-crowding of
the land in Chicago.

Compared with the Jewish quarter of New York the Jewish quarter of Chicago is not very densely populated. Only two blocks in the district had a population of 400 to the acre in 1901 when the tenement house investigation of the City Homes Association¹ was carried out, while there are blocks in the Jewish quarter of New York city which have 3,000 to the acre. This is, however, not a fair standard of comparison between the two cities. In the Jewish quarter of New York the houses are five and six or even seven stories high, in Chicago there are few over four stories and the majority are only two or three stories high.

The Report of the Bureau of Labor on "The Slums of Great Cities," 1894, stated that fewer people in the slums of Chicago had the use of yards than in New York, Baltimore, or Philadelphia; that 628 lots or 39 per cent. of all investigated were covered more than 65 per cent., which is the limit in other cities; 275 lots, or 18 per cent. were covered more than 80 per cent., and 144 lots were covered from 90 per cent. to 100 per cent. by dwellings alone. In 22 blocks of the Jewish quarter we are considering 460 lots are covered 65 per cent., and 279 are covered 80 per cent., according to the report of the City Homes Association.

Such over-crowding of the land is certainly a factor in the spread

¹ Investigation of Tenement House Conditions in Chicago. Published by the City Homes Association 1901. For sale at McClurg's.

of tuberculosis but it is not the most important factor. In Chicago the statistics collected by the Tuberculosis Committee of the Visiting Nurse Association and compiled by Dr. Caroline Hedger show that a poor quarter of the city, even if it is sparsely settled, has a higher relative death rate from this disease than a more densely settled quarter inhabited by well-to-do people. The accompanying diagram shows very clearly the increase of tuberculosis in the poorer wards, the decrease in the richer wards, and shows that the rise and fall does not correspond to the number of persons per acre in these wards. (The specially high rate in the First and Eighteenth Wards is explained by the fact that these two wards have a large number of hotels, lodging-houses, "furnished rooms," etc., with their floating population.)

Diagram of all the wards in Chicago shows preponderance of tuberculosis in the poorer wards, irrespective of acreage population.

For example, the Twentieth Ward has a density of population almost equal to that of the Nineteenth Ward but the death rate from tuberculosis in the latter is more than double that of the former. More striking still is the contrast between the Sixth and the Fourteenth Wards which have about the same density, and between the Ninth and Twenty-first.

We have no statistics from American cities as to the part played by actual poverty in the prevalence of tuberculosis, but the information collected in Germany on this point is very interesting. Herr Gebhardt of Lubeck presented before the Tuberculosis Congress statistics which are quoted by Max Solomon¹ as follows:

"In Hamburg in 1896 and 1897 of 1,000 taxpayers with an income

	Deaths from Tuberculosis
Over 3,500 marks	1.07
From 2,000 to 2,500 marks	2.01
From 1,200 to 2,000 marks	2.61
From 900 to 1,200 marks	3.91

There are no figures for people with incomes of less than 900 marks, as they are exempt from the income tax, but if the figures increased in the same proportion the rate for this class would be at least 5."

Such statistics should help us to understand the prevalence of tuberculosis in certain wards in Chicago. Another point to be considered in reference to Chart III is that over-crowding of the land is

¹ Die Tuberculose als Volkskrankheit, Berlin, 1904.

not in itself necessarily a menace to health, provided the buildings are in accordance with sanitary laws. Nor is a sparsely settled neighborhood always a healthful one. The Twenty-seventh and Twenty-ninth Wards are striking instances of a high mortality from tuberculosis in a sparsely settled region, the Twentieth and Twenty-first are instances of the converse. Evidently other factors than overcrowding of the land must enter into the question. The presence of the Stock Yards and the city dump lessen the congestion in the Twenty-ninth Ward, but hardly add to its healthfulness. The same may be said of the gas-works in the Twenty-second Ward, the North Branch of the Chicago River, Bubbly Creek, the railroad tracks, tanneries, glucose factories, etc.

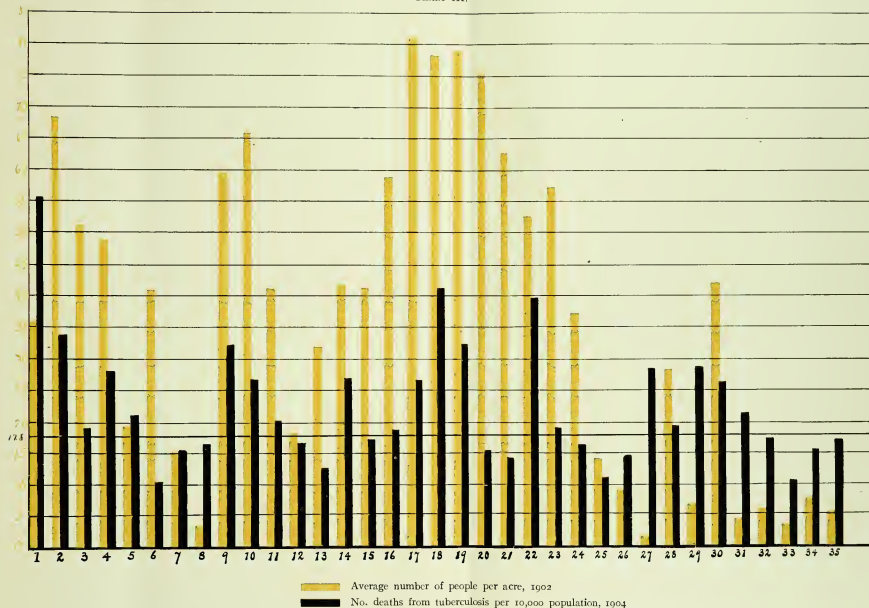
Even when the land is not overcrowded, the individual houses may be, and a region of small, low cottages may be more unhealthful than one of tall tenements.

Scotch statistics show that over-crowding in rooms is more important than over-crowding of land.

According to Arthur Newsholm (*Vital Statistics*, London, 1899), the number of rooms occupied by each family is of much greater importance in relation to health than the number of persons living on an acre. Given homes properly constructed and drained, and given cleanly habits on the part of the tenants, increased aggregation of population in a given area has no influence in raising the death rate, except in so far as it is accompanied by *over-crowding in individual apartments*, an event which is by no means necessary under the circumstances named. In other words there is no causal relationship between density of population *per se* and a high mortality. The true index of density is the number of persons in each occupied room. . . . Dr. Anderson's researches in Dundee and Dr. Russel's in Glasgow both show that mortality from phthisis in these towns is highest among the inmates of three-room houses. Aberdeen, which has only 13.6 per cent. of its population living in one room, had the lowest death rate of eight great Scotch towns, the death rate rising *pari passu* with the diminution in size of the average house until we come to Glasgow, with 24.7 per cent. of its population living in one room. According to the same authority, in one- and two-room houses the deaths from acute diseases of the lungs and consumption were 47.8 per 10,000 living; in homes of five rooms and upwards only 11.4.

The average number of apartments in a house in the Jewish quarter

CHART III.



This diagram is only approximately correct, as the figures upon which it is based were collected during different years. The number of persons per acre was calculated in 1902; the deaths from tuberculosis are from the Board of Health Records for 1904.

of Chicago is three and the average number of rooms is three. This does not, however, convey a real idea of the smallness of the living space to a family. Forty-one per cent. of the apartments in this district investigated by the City Homes Association had under 300 feet of floor space. Let anyone measure off in one direction seven paces for the length, and at right angles five paces for the width, and he will have about 300 square feet of floor space. Some apartments were found to have but 80 square feet. The number of persons living in this amount of space averages between four and five, but apartments were found in which three or even four persons were crowded into a single room. Though the large apartment house is the exception in Chicago, yet it does exist. The small part of the Jewish quarter investigated by the City Homes Association had 87 double-decker tenements.

In the rear tenement the evils of darkness, dampness, and dilapidation are usually added to those of over-crowding. The rear tenement is usually lower than the front tenement, more often of frame than of brick, and far more often in poor repair. The proximity of the alleys with their stables and heaps of garbage add to the unhealthfulness of such tenements. Forty-five per cent. of the population of the block investigated by Dr. Sachs and Miss Hazard live in rear flats, rear buildings and basements.

Dilapidation and want of repair is perhaps the most striking feature of this neighborhood to the visitor from one of our large eastern cities. Most of the frame tenements are in more or less bad repair, the landlords thinking it useless to spend money in repairs on houses which cannot last long in any case. One house out of every four in the Jewish quarter was pronounced by the City Homes Association to be in a state of dilapidation which made it a menace to the health and safety of the tenants. Less than one half of the rear tenements are fit for habitation according to the same authority.

The condition of the houses themselves is not the only important thing. When the house must be entered from a badly paved street, or from a street which, though paved, is filthy from lack of sweeping, only constant efforts can keep it really clean. Of late years a great many streets in these two wards have been paved, but even with good paving Chicago streets are almost always filthy and the alleys are

Importance of dirty streets especially in a windy city.

still worse. The dirt, which accumulates in them is not only dust and manure, but decaying vegetables and refuse of all kinds. The prevalence of high winds in Chicago makes this condition of the streets a special menace to the health of the people, for the germ-laden dust is continually raised and whirled in the air by gusts of wind, entering at every open window, and choking passing pedestrians. Professor Hueppe's statistics show that a dry windy city has a higher death rate from tuberculosis than one with a damp, foggy climate. London and Berlin with their fogs and damp raw air have rates of 17.7 and 23.1 respectively, per 10,000 of population, while Vienna, dry and windy, has a rate of 46.4.

The courts and passage-ways between houses and the back yards are often still worse than the streets, for they become receptacles for all sorts of rubbish, and have often little access to air and sunshine. For instance, Miss Hazard, who made the house-to-house investigation of a block in this neighborhood, reports as follows concerning the streets surrounding that block: "On O'Brien Street which is wide and well paved, and which might easily be made very attractive, the edges of the street proper were in early May covered with a long, yellowish border of varying width, the sun-dried and wind-blown remains of the street manure. This accumulation is light and chaffy, and when not mixed with too many other substances is used by the children in their play, as other children would use sand heaps. The alleys are unspeakably filthy and disgusting. In one, the body of a large dog, which lay undisturbed during some warm days in early November, was still there for some time after the snow had disappeared in April. Many little stables open on the alleys, where manure heaps accumulate and piles of garbage, making them as noisome and insanitary as a city refuse dump."

This neighborhood is a very orderly one and there is very little crime. The people are sober, the Jew habitually drinks moderately or not at all. Early marriages, the survival of an almost patriarchal form of family life and the strength of public opinion make sexual immorality rare. The character of food consumed in a Jewish family is usually better than that found in an Italian or Irish family of the same income. On the other hand Miss Hazard found that

the standard of cleanliness both personal and domestic, is low, and the house of a consumptive is sure to become infected and remain so unless stringent measures are used for its disinfection. Baths are unknown luxuries to a large part of the population. The Tenement House Committee estimated that a little more than 96 per cent. of the people in this neighborhood were without bath tubs. The nearest public bath for the people of this district is the one on Mather Street, nine blocks from the center of the district.

The need of hospitals for tuberculosis is unquestioned. If a patient in the early stages of the disease can be given a sojourn of six months or more in a favorable climate with abundant food, rest, and out-of-door life, he will probably recover. It is on this principle that the great free hospitals in Colorado have been founded. But it is only a very small proportion of the tuberculous poor who can ever reach these places. The vast majority are forced to remain in the cities in which they contracted the disease, and the warfare against tuberculosis must therefore adopt weapons which can be used in our large cities. Even the favored few who can get to Colorado can remain there only a short time and then in many cases return to their old homes and former occupations, with the frequent consequence that they relapse in a short time. Miss Hazard gives an instance, from the practice of Dr. Sachs, which came under her observation and which illustrates this point.

Need of local sanatoria for consumptive poor.

Case on Maxwell Street.—"In a dark room of a rear building of Maxwell Street lived in December 1903 a small family consisting of a young man about twenty-five years old, his wife and little girl. The man was a nickel-plater by trade. For some time after he was married he earned fairly good wages, and the little family occupied a flat in one of the more comfortable houses of the Jewish district. Work was steady and they were thought to be unusually prosperous, according to the standards of the neighborhood. Then tuberculosis developed. The man became very ill, struggled on for a time, was finally unable to work, and, at his own expense went to Denver. There he remained more than two months, getting better all the time. But meanwhile the small store of savings had been exhausted, the home in Chicago had been broken up, another baby was expected, and the father, not really cured, but hoping that he might continue

Two cases illustrating relapse after return from a distant climatic cure.

to improve, came back and went to work again. The fumes of the acid used in plating brought on terrible fits of coughing, soon all the old symptoms returned, and work was no longer possible. The family moved again, this time hiring a single room opening from the dark crowded kitchen of a rear flat. There the wife earned what she could by working at her trade of making hair switches. Sleeping, cooking, eating, working, all the processes of the family life went on in this small room. There were some evidences of an instinct of cleanliness. Things were perhaps as decent as could be reasonably expected under such conditions. But the walls were soiled, the floor mats very dirty, the room untidy, and the materials for switches and 'fringes' added much to the general impression of unpleasant disorder. The room was dark of course, as the single window opened upon a narrow passage between the rear building and the adjacent taller tenement house. Beside the window was the big, clumsy hair machine on which was a piece of work nearly finished, a 'fringe' perhaps three-quarters of a yard in length which fell in thin waving lines nearly to the floor. Scarcely three feet away was the bed on which lay the restless coughing patient. There was no way of heating except by the tiny oil stove used for cooking, the window was shut and the air was close and heavy. The room seemed full of suggestions of unnecessary suffering, not only for the patient himself, but for his pale little girl, for the weary mother, for the baby soon to be, for some other family who would in time be occupying this dismal 'home,' and for the customers in a more prosperous part of the town who would some day be using the infected handiwork.

"Only a short time before this young man had been considered well and strong, a useful citizen in our industrial community. Even after the disease developed it had been quick to respond to the more favorable conditions of living in Denver. If, however, at the very beginning of his illness, or after his return from Denver, he could have had treatment here in Chicago, open air treatment such as is given successfully in some of our large cities, it would seem reasonable to believe that he might have been cured. Instead we have the wasted life of a good workman, and possible infection for numbers of persons beyond the circle of the immediate family and their friends."

In this case there was no outside help or advice given, the man simply did what seemed to him the only thing possible under the circumstances. In another instance from the same neighborhood the mature experience and abundant resources of a great charitable association were brought to bear upon the case, and yet the experiment was as unsuccessful and as wasteful as in the former case. This was a married woman who developed tuberculosis at the age of about thirty-five years. She was sent out west to a sanatorium where she remained for six months, enjoying the best of care and a most liberal diet. She improved greatly, gained twenty pounds, and was discharged with the assurance that if she followed the course of treatment she had learned at the sanatorium she need not fear a relapse. On her return to Chicago, she took up her old life again, in the same damp, dark, rear tenement in which she had contracted the disease. She tried to follow the sanatorium rules but the three essentials of the treatment were beyond her reach. Rest was impossible to the mother of a large family. Milk, eggs, and beefsteak cannot be bought out of the wages of an unskilled operator and a cash-girl, the only wage-earners in her family, and as for out-of-door treatment she abandoned all attempt at that, finding that a degree of cold which is exhilarating in a dry, sunshiny room is unendurable in a dark, damp one. She has not been home six months but the disease has returned already, she has lost the weight she gained out west, and there is practically no hope for her now, as a relapse usually means that the disease will progress more rapidly than it did originally.

In Germany the carefully compiled statistics of the Workingmen's Insurance Sanatoria showed that a large number of successfully treated cases of consumption relapsed after they returned to their homes and work. In order to prevent this, dispensaries have been opened in several German cities to which the discharged patients go at frequent intervals for advice, treatment or recommitment to the sanatorium. In this way a threatened relapse can be averted and the patient can be kept on the road to complete recovery. A strong effort to do this is being made by Dr. Sachs at the United Hebrew Charities Dispensary. To make it effective it would seem necessary to supplement the dispensary work with material aid from charitable associations, so that a case threatened with relapse might be helped

Need of subsequent
care for discharged
cases.

to move to more sanitary quarters and to obtain the necessary food. Dr. Sachs states that the patients who, after their return from the National Jewish Hospital in Denver, have been induced to move to a more healthful part of the city, have for the most part been saved from relapse.

Suggestions for utilizing vacant lots in Chicago.

But climatic treatment is at the best a treatment for the favored few, and the only way in which the modern methods of curing tuberculosis can be applied to the great majority of its victims is by means of local sanatoria and dispensaries or of a practicable system of home treatment. This last can be carried out successfully in the homes of the well-to-do, but it is a question whether it can be done in the homes of the very poor. For them some sort of hospital treatment, at least at the outset, is almost essential. There are now in many parts of our country very successful tent sanatoria, which are equipped at small expense and which answer all the purposes of tuberculosis hospitals. Chicago has many large vacant areas all over the city. Why should not tent colonies be founded on some of these empty spaces and used by the people in those neighborhoods? The nearness to the peoples' homes, the fact that they need not be separated from their families altogether, and that those incipient cases who still were able to work might go about their occupations during the day and yet have the benefit of the sanatorium at night, would bring such places within the reach of thousands to whom any other form of treatment would be impossible. They would also serve as centers of education to the community around them as to the means which are used in preventing and in curing tuberculosis.

Need of compulsory disinfection of houses formerly occupied by consumptives.

Dr. Sachs has emphasized the importance of house infection and the number of infected houses in the Jewish quarter. An instance which came to the notice of a resident of Hull-House illustrates this point: An Irish family consisting of father, mother, and five children lived for many years in a small house of the neighborhood. Both parents had what is usually called "old-fashioned" consumption lasting many years, of which both eventually died. The four eldest children contracted, one after the other, tuberculosis of a much more virulent type, and all died after comparatively short illness. The youngest child left the house and it passed into the hands of a Jewish family. The house, steeped as it was in infection, was not disinfected,

and soon after, the young wife of its new owner sickened of the same disease.

Miss Hazard describes a house in the block investigated by her which is going through the processes needed to make it a center of infection.

Case illustrating need of disinfection.

"In a small two-story tenement on O'Brien Street, there have lived during the past winter eleven persons, seven adults and four children. There is no cellar, the first story is of brick raised only one low step above the ground, the second story is of wood. In front is a little grocery store in the rear of which lived the widow of the former proprietor, and their son. The father had died a few weeks before, 'of cough' his wife said, though the entry in the record of deaths in the City Hall did not give tuberculosis as the cause. Upstairs in the front flat of four rooms lived a husband and wife and four children. This last family had lived in the house three years. The father, a tailor 31 years old working in a sweat-shop, was during last winter suffering from tuberculosis in an advanced stage. He had been 'a little sick when he came, but now he was very bad.' Of the four rooms, two were of fair size and were used as kitchen and parlor. From each of these opened a tiny bed-room. There were in the whole apartment five windows, two opening on narrow passageways on either side of the house, and three in front which might be said to open on the street except that as a matter of fact they do not open on anything and never have, not having been constructed with this purpose in view. The owner of the house has often been asked 'to fix them so as they would open just a little, but he always said it could not be done.' In this front room the shades were down and from their beaded edges drops of water occasionally fell to the sills and to the floor. The cracks around the windows were stuffed with rags which were soft and puffy with accumulated moisture. On the sills and also on the floor in front of the windows were other cloths so saturated that little pools of water had formed about the edges. The paper hung loosely, discolored by the dampness, in some places big pieces, soiled and blotched with mildew, had broken away from the walls. The ceiling was broken and stained, the floor covered by damp and dirty mats. Opening from the 'parlor' was one of the little bed-rooms where also the window

was not made to raise, and where also was felt the same penetrating chill. The single side window opening on a narrow passage which separated it from the blank wall of the next house gave but little light, and the room was so dark that in spite of the bright sunshine without, it was difficult standing in the middle of the room, to read my notes after they were written. In this dark kitchen which was also general family living room by day and sleeping room by night, the air was warm and damp and foul, a perfect place for the preservation of bacilli."

Compulsory disinfection and the even more important cleansing and renovation necessary to make the house formerly inhabited by a consumptive a safe place for people to live in, is the only remedy for conditions such as these. In New York the landlord is compelled not only to disinfect the house in which a death from consumption has occurred, but to carry out a complete renovation, including the removal of wall-paper and fresh calsomining or white-washing. If the family moves soon after the death has occurred, as so often is the case, the Department of Health posts a notice on the door forbidding the occupation of the house by new tenants until it has been pronounced properly disinfected.

At the present time in Chicago there are certain things which seem obviously necessary in the warfare against tuberculosis. These are in the first place compulsory registration of cases of tuberculosis which can be carried out, as it is in New York city, in such a manner as to cause no hardship to the patient and no publicity, and which makes it possible to ascertain with a fair amount of accuracy the distribution of this disease throughout the city, the quarters which are most in need of preventive measures, the houses which have become infected and the rate of increase or decrease from year to year. Second, the compulsory disinfection and renovation of infected houses, a measure which is absolutely necessary in face of the large number of cases of house infection in any large city. Inasmuch as it is impossible for the consumptive poor to obtain the food which they need if they are to be treated outside of a hospital, as so many must necessarily be, it should further seem that the various charitable associations in the city should make some provision whereby milk, eggs, etc., could be supplied free of charge to them, and whereby

they could be helped to obtain more sanitary quarters. Finally it must always be remembered that although sanatorium treatment in a favorable climate is the ideal treatment for consumption, it can only be utilized by a small number of people, and that if the modern treatment of tuberculosis is ever to be applied to the large majority of its victims it can only be done by means of local sanatoria and of some practical method of home treatment.

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